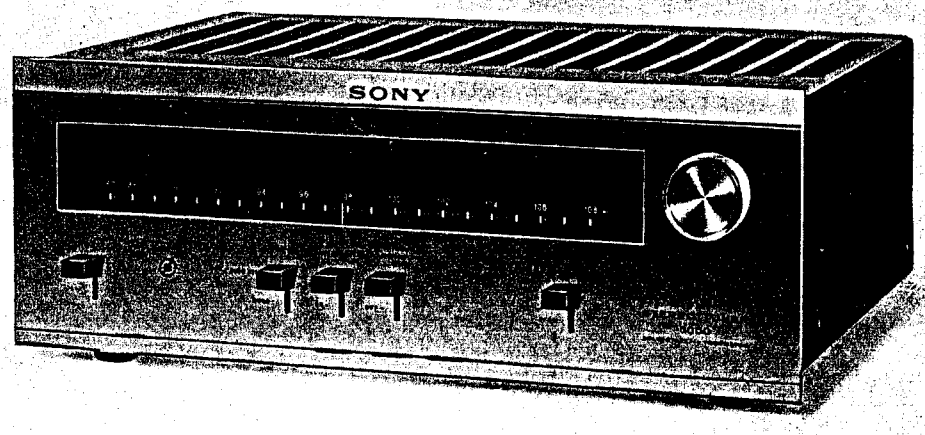
Original

ST-5000W

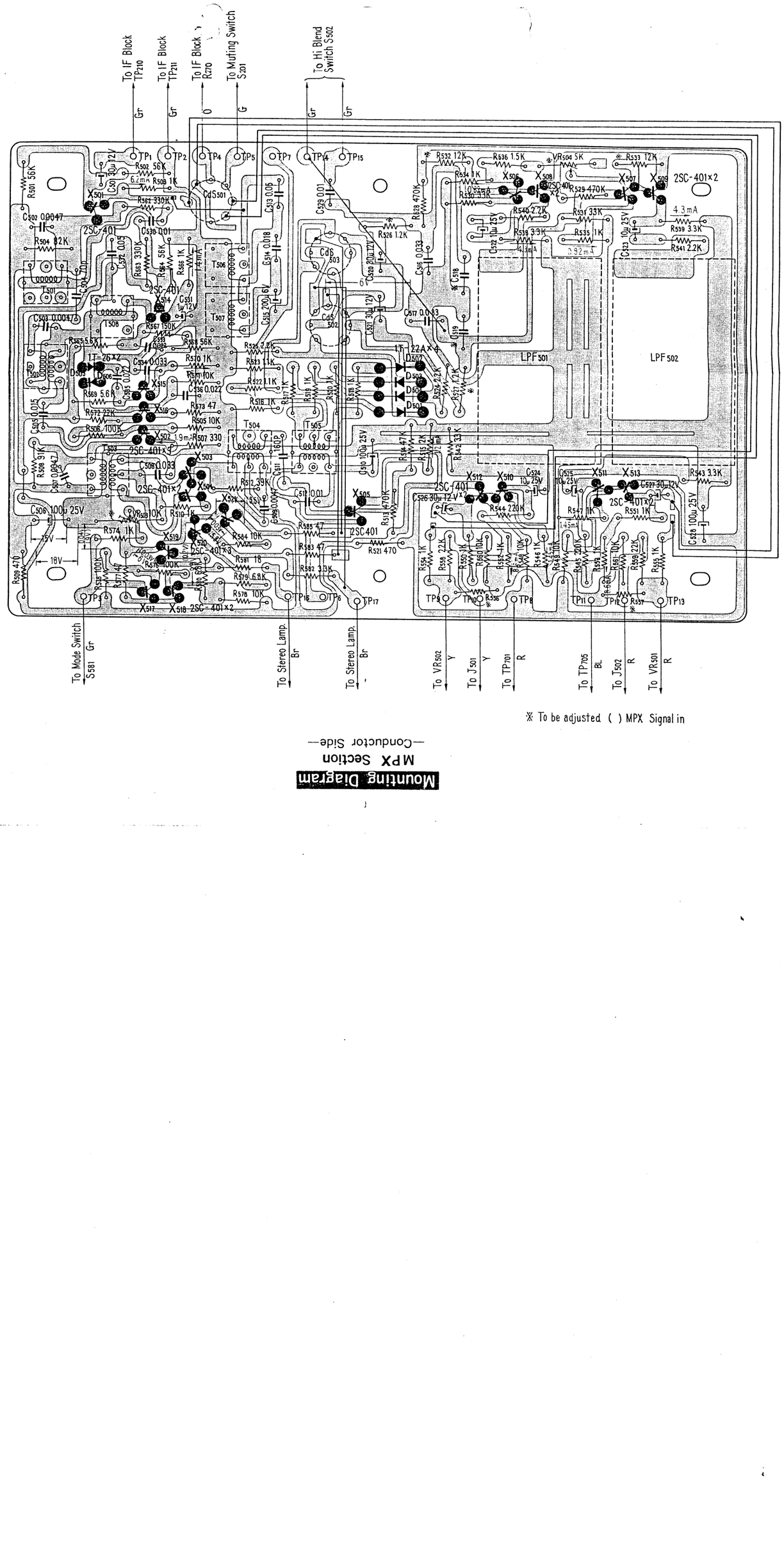


Specifications

Circuit System:	All transistor FM stereo tuner, Superheterodyne, 45 transistors, 30 diodes
Frequency Range:	87~108 MHz (3.44~2.78 m)
Intermediate Frequency:	10.7 MHz
Usable Sensitivity:	2μV (IHF standard)
Image Frequency Rejection Ratio:	Better than 90 db (at 98 MHz)
IF Rejection Ratio:	Better than 90 db (at 98 MHz)
Capture Ratio:	1.5 db (IHF standard)
AM Rejection Ratio:	50 db (FM 400Hz 100% modulation, AM 1 kHz 30% modulation)
Alternate Channel Selectivity:	Better than 60 db (IHF standard)
Signal-to-Noise Ratio:	70 db (at 100% modulation and 1 mV input)
Frequency Response:	20 Hz ~15,000 Hz ±0.5 db (from standard 75μsec Deemphasis)
Harmonic Distortion:	Mono Better than 0.3% (at 400 Hz 100% modulation) Stereo Better than 0.3% (at 400 Hz 100% modulation)
Stereo Separation:	Better than 40 db (at 400 Hz 100% modulation) Better than 30 db (at 50 Hz ~10,000 Hz 100% modulation) Better than 25 db (at 20 Hz ~15,000 Hz 100% modulation)
19 KHz (pilot), 38 KHz (sub-carrier) Suppression:	Better than 55 db
Muting Level:	10μV~1,000μV
AUTO STEREO Operation Level:	15μV
Frequency Drift:	Less than 20 kHz with AFC Switch in [OFF] position: negligible with AFC Switch in [ON] position
Antenna Inputs:	300 ohms Balanced 75 ohms Unbalanced
Audio Outputs:	Fixed: 700 mV (400 Hz, 100% modulation) Output level difference between LEFT and RIGHT ±0.5db Impedance 10K ohms Variable: 0~2 V (400 Hz 100% modulation) Impedance 1K ohms with maximum output
Power Requirements:	AC 117 volts, 60 Hz
Power Consumption:	17 watts
Dimensions:	5¾ (H) × 15¾ (W) × 12¼ (D)"
Weight:	18 lbs. (8.2 Kgs)

SONY®
SERVICING GUIDE

Original

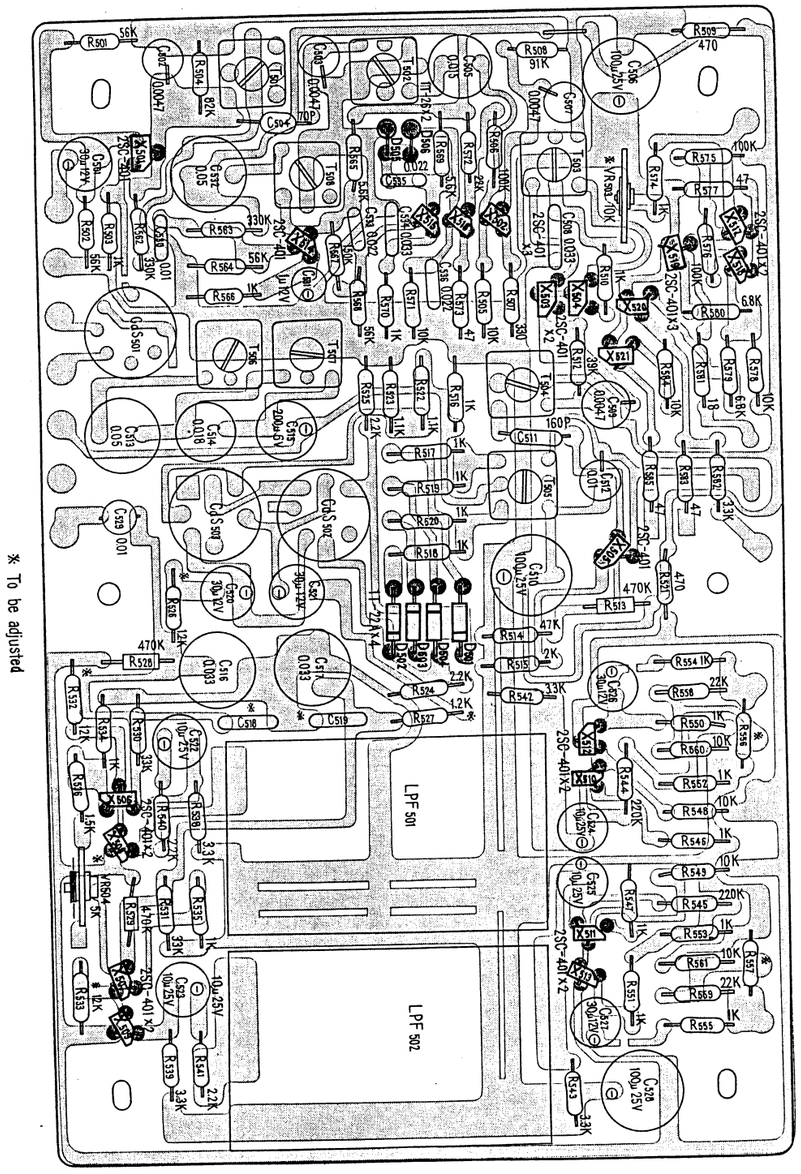


Mounting Diagram

MPX Section

—Conductor Side—

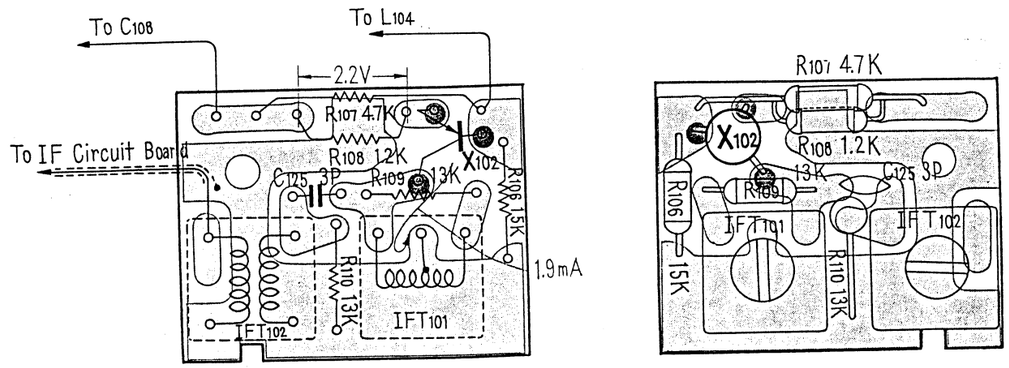
—Components Side—



* To be adjusted

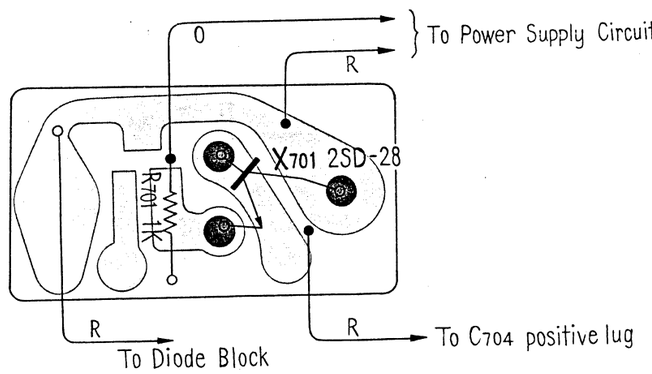
Mounting Diagram

RF Mixer (Converter) Section

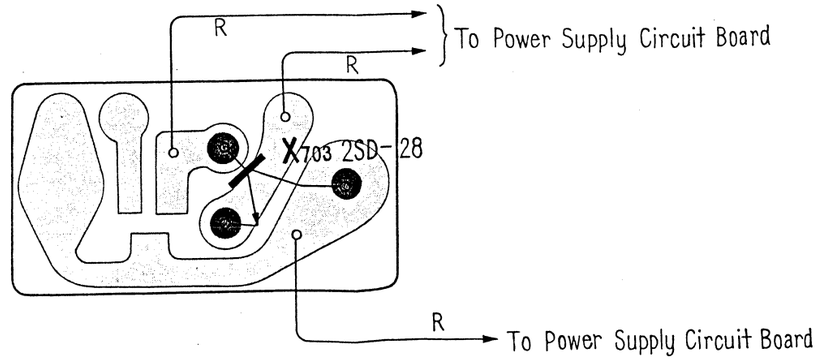


Power Supply Section

Transistor X_{701}



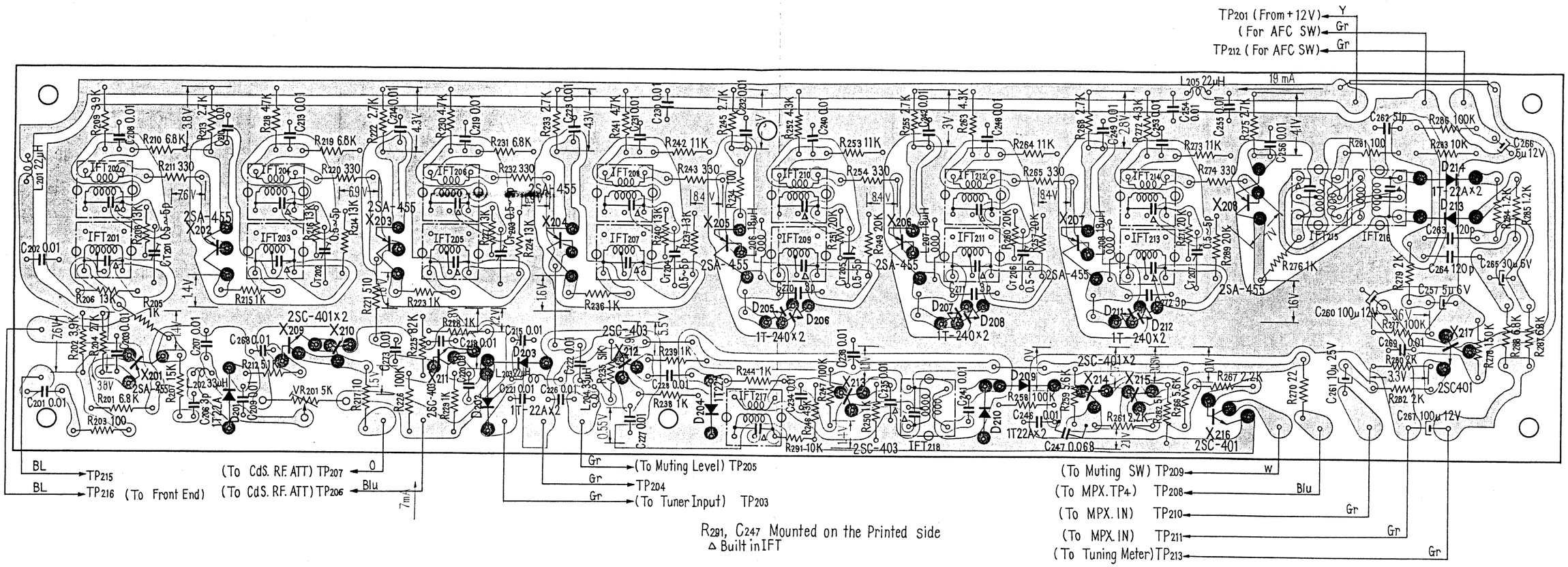
Transistor X_{703}



Mounting Diagram

IF Section

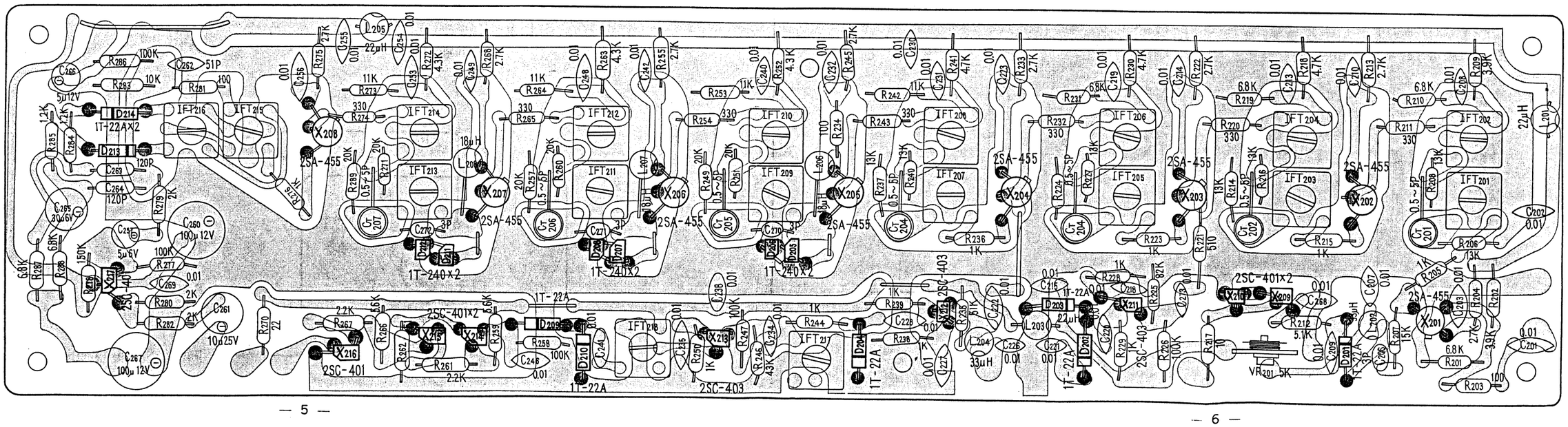
-- Conductor Side --



R291, C247 Mounted on the Printed side

△ Built in IFT

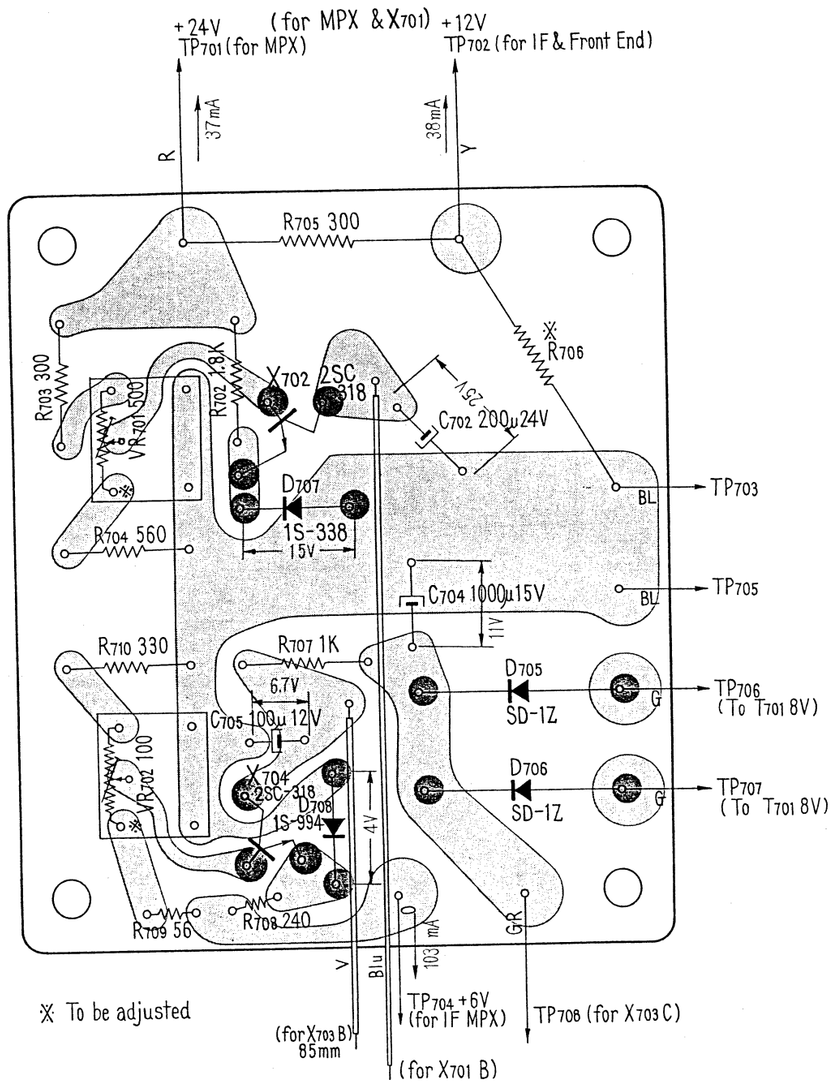
---Components Side--



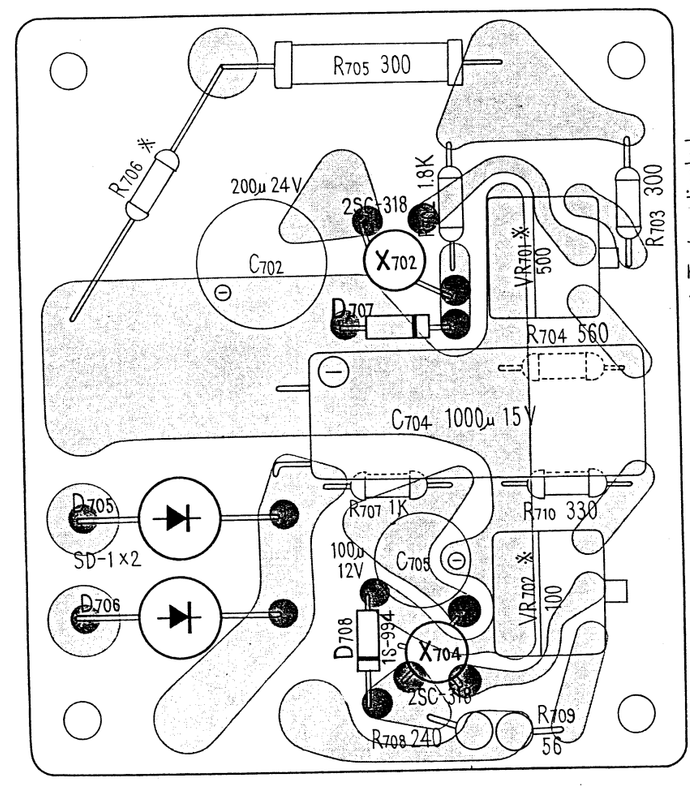
Mounting Diagram

Power Supply Section

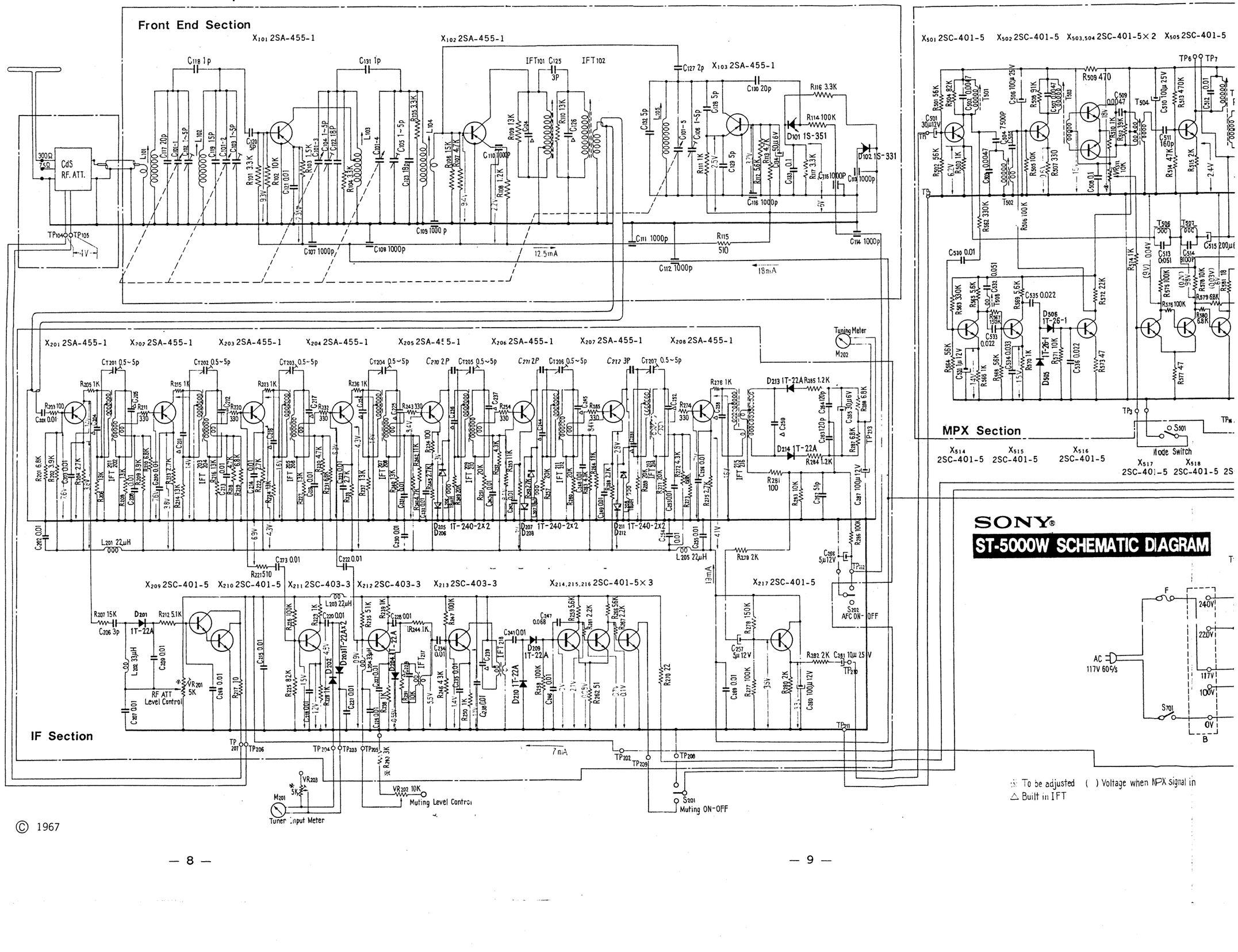
—Conductor Side



—Components Side—



※ To be adjusted.

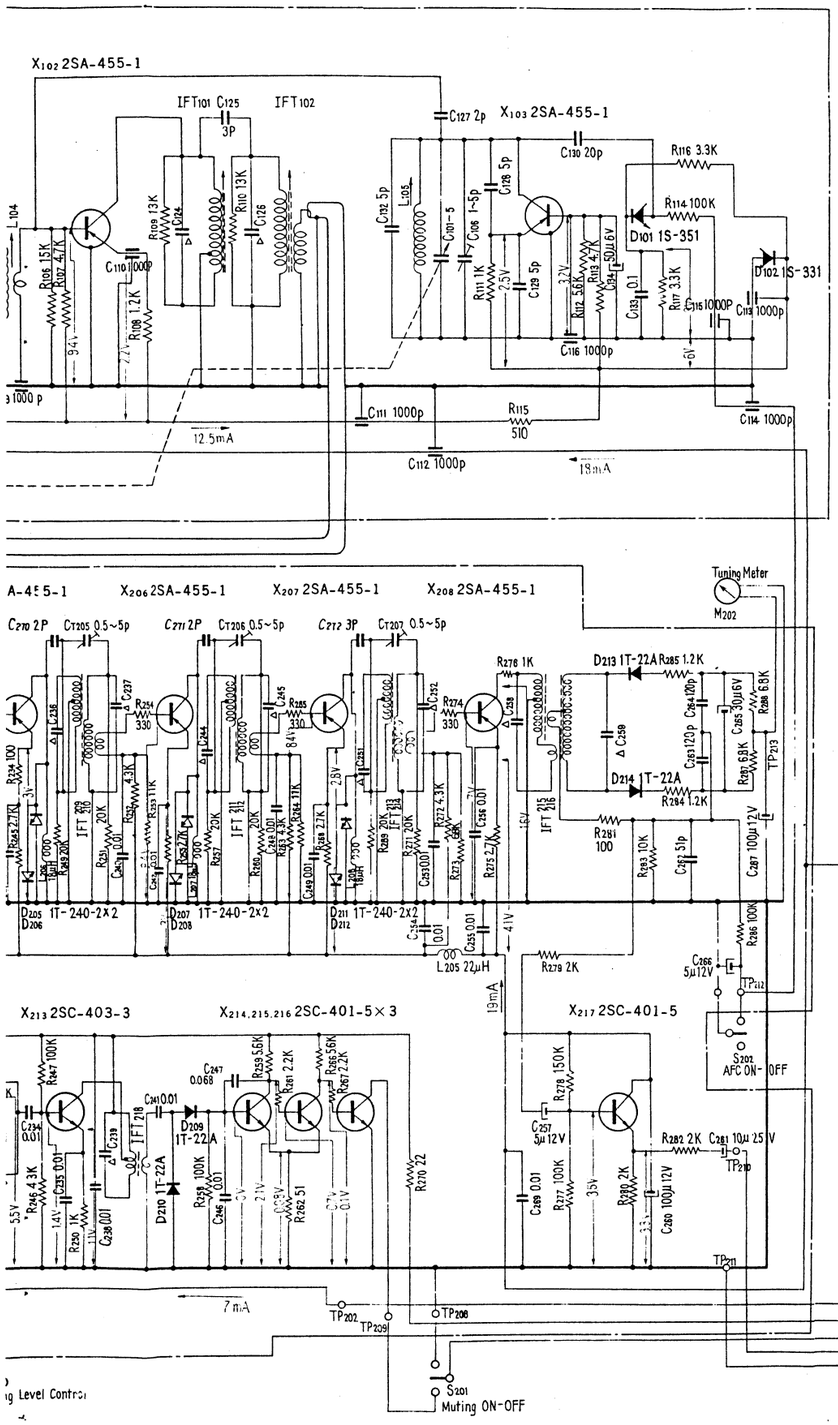


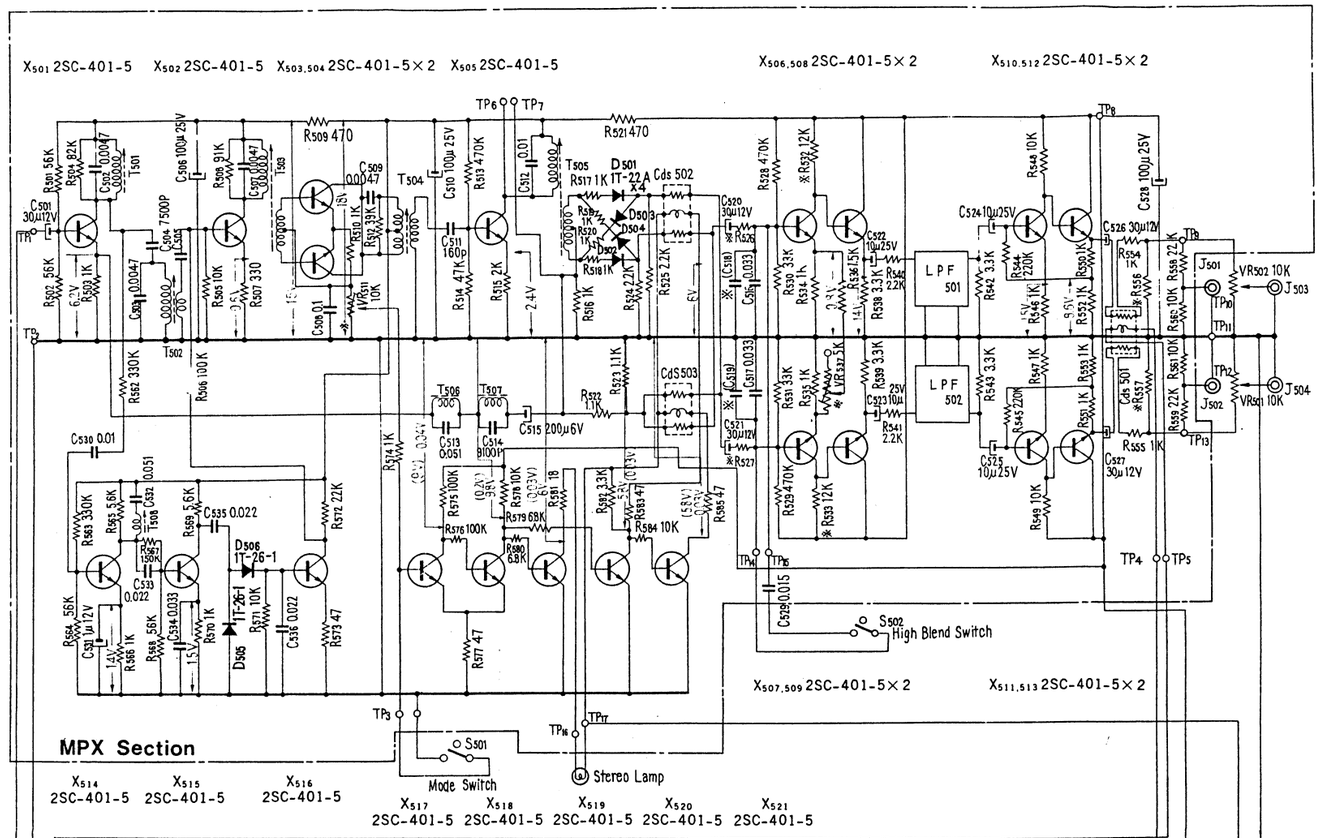
SONY®

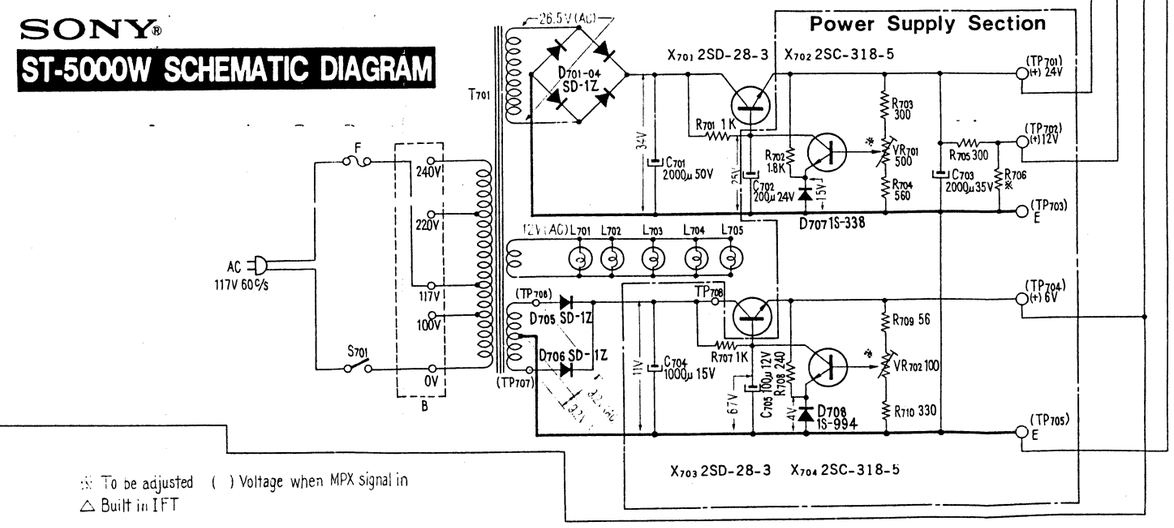
ST-5000W SCHEMATIC DIAGRAM

© 1967

F G H J K L M N O P Q R







※ To be adjusted ( ) Voltage when MPX signal in
△ Built in IFT

Complete Spare Parts List for ST-5000W

June, '67

Part No.	Description	Q'ty
A. Mechanical Parts		
	i) Front End (Tuner)	
Y-38512-01-	Front End, completed (FMC-023W1)	1
X-38512-01-	Boss Assembly, tuning gear	1
-02-	Stopper Assembly	1
-03-	Shaft Ass'y, tuning drum	1
-04-	Cushion Ass'y	1
3-851-210-	Chassis, tuner	1
-211-	Plate A, shield	1
-212-	Plate B, "	1
-213-	Plate C, "	1
-214-	Plate D, "	2
-215-	Plate E, "	1
-216-	Case, tuner shield	1
-219-	Nut, bearing	1
-220-	Drum	1
-221-	Washer	4
-222-	Bar, short	1
	ii) Main Chassis	
X-38240-01-1	Panel Ass'y, chassis; front	1
-02-1	Sub-Panel Ass'y	1
-04-4	Chassis Ass'y	1
-05-2	Guide Ass'y, pointer	1
-06-1	Pointer Ass'y, dial	1
-07-3	Knob Ass'y, tuning including	1
3-824-018-	Knob, tuning	(1)
7-621-715-62	Setting Screw 4 x 12	(1)
X-38240-08-1	Indicator Ass'y, stereo	1
-09-1	Tube for Lamp, right	1
-10-1	Tube for Lamp, left	1
-11-2	Bearing Mounter Ass'y, tuning shaft	1
X-20299-05-1	Terminal Ass'y, middle type	3
X-20319-01-1	Terminal Ass'y, small size	1
3-824-028-	Panel, rear	1
-029-	Label, specification	
-056-	Label, specification (UL)	1
-030-01	Scale, dial	1

Part No.	Description	Q'ty
3-824-031-	Plate, dial back; upper	1
-032-	Plate, dial back; lower	1
-033-	Clamp, stereo indicator	1
-034-	Holder, lamp socket	1
-035-	Holder, tuning and tuner input meter	2
-036-	Filter, lamp for tuning meter	2
-037-	Filter, lamp for dial scale	2
-038-03	Shaft, tuning dial	1
-039-	Bearing, tuning shaft	1
-040-	Clamper, bearing	1
-041-02	Flywheel	1
-042-	Boss, BB 3 x 38	4
-043-	Case, IF Shield	1
-044-03	Heat Sink	1
-045-	Mounter, RF attenuator	1
-046-	Stopper, potentiometer	1
-007-	Plate, foot	1
-049-	Boss, BA 3 x 5 x 32	6
-050-	Collar, 10 x 2t	9
-051-	" , 6 x 2.8t	9
-052-	Tube, light intercepting	1
-054-	Collar, 10 x 5.7t	3
-026-	Mounter, tuning shaft bearing	1
-057-	Spacer, bearing	1
-058-	Bearing, flywheel	1
-059-	Packing, flywheel	1
2-029-921-04	Cabinet, cover	1
-930-	Screw, cover	4
-931-	Knob, lever switch	5
-935-02	Spacer A, blue	2
-935-22	" A, black	1
-936-01	" B, fiber	2
-935-02	Label, voltage	1
2-031-955-01	Cover, pilot lamp	1
-956-01	Escutcheon, pilot lamp cover	1
0-051-263-00	Foot, rubber	4
3-401-179-00	Lug, wire fastening	6
3-410-032-	Stopper, cord; small	1
3-422-204-03	Label, caution	1
0-204-220-	Rubber Cushion, front end	4
-214-	Screw, front end cushion	4
3-802-520-	Spring, dial string	1
3-811-140-	Pulley	5
-819-02	Name Plate, FCC	1
	Spacer for 2SD28	2
	Bushing for 2SD28	4

Part No.	Description				Q'ty
3. Electrical Parts					
	i) Front end (Tuner) Section				
1-538-545-11	Printed Circuit Board				1
1-151-150-	Capacitor, tuning C101-1 - 5				1
1-401-295-	Coil, ANT & RF ANTL101, RFL102,103				3
1-425-283-	Coil, RF L104				1
1-405-160-	Coil, oscillator L105				1
1-403-282-	Transformer, IF	IFT101			1
-286-	" , "	IFT102			1
1-141-067-	Trimmer, ceramic cylinder	C102 - 106			5
1-102-019-	Capacitor, feed through	C107 - 116			11
	Carbon Resistor (RD1/8SR ±5%)				
1-244-466-11	510 ohms	R115			1
-473-11	1K ohm	R111			1
-475-11	1.2K ohms	R108			1
-477-11	1.5K "	R103,120			2
-485-11	3.3K "	R101,104,105,116,117,118			6
-491-11	5.6K "	R112			1
-497-11	10K "	R102,119			2
-500-11	13K "	R109,110			2
-501-11	15K "	R106			1
-521-11	100K "	R114			1
-489-11	4.7K "	R107,113			2
	Mold Type Ceramic Capacitor				
1-101-937-	1PF	±10%	500V	C131	1
-939-	2PF	"	"	C127	1
	Ceramic Capacitor				
1-101-953-	3PF	±0.5PF (SL)		C125	1
-970-	5PF	±0.25PF (SH)		C120,135	2
-968-	5PF	" (RH)		C128,129	2
-969-	5PF	" (PH)		C132	1
-971-	15PF	±5% (SH)		C119	1
-972-	18PF	"		C122,123	2
-973-	20PF	"		C117	1
1-102-804-	20PF	"(TH)		C130	1
1-101-141-	0.01uF	+80 -20%	25V	C121,136	2
	Mylar Capacitor				
1-105-417-12	0.1uF	±20%	35V	C133	1

Part No.	Description		Q'ty
	Electrolytic Capacitor		
1-121-322-11	50uF +150 - 0% 6V	C134 ----------	1
	ii) IF Section		
1-538-547-11	Printed Circuit Board ----------		1
1-141-062-	Trimmer, ceramic cylinder	CT201 - 207 ------	7
1-221-389-	Potentiometer 5K ohms	VR201 ----------	1
1-403-284-	Transformer, IF	IFT218 ----------	1
-285-	" , "	IFT217 ----------	1
-286-	" , "	IFT210,212,214,202, 204,206,208 -----	7
-287-11	Discriminator, primary	IFT215 ----------	1
-287-21	" , secondary	IFT216 ----------	1
-282-	Transformer, IF	IFT201,203,205,207, 209,211,213 -----	7
1-407-040-	Inductor, micro (18uH)	L206,207,208 -------	3
-026-	" , " (22uH)	L201,203,205 -------	3
-042-	" , " (33uH)	L202,204 ----------	2
	Carbon Resistor (RD1/8SR ±5%)		
1-244-425-11	10 ohms	R217 ----------	1
-443-11	56 "	R270 ----------	1
-442-11	51 "	R262 ----------	1
-449-11	100 "	R203,234,281 ----------	3
-461-11	330 "	R211,220,232,243,254,265,274 --	7
-466-11	510 "	R221 ----------	1
-473-11	1K ohm	R205,215,223,228,229,236,238, 239,244,250,276 ----------	11
-480-11	2K ohms	R279,280,282 ----------	3
-481-11	2.2K "	R261,267 ----------	2
-475-11	1.2K "	R284,285 ----------	2
-483-11	2.7K "	R204,213,222,233,245,255,268, 275 ----------	8
-487-11	3.9K "	R202,209 ----------	2
-488-11	4.3K "	R252,263,272 ----------	3
-489-11	4.7K "	R218,230,241 ----------	3
-490-11	5.1K "	R212 ----------	1
-491-11	5.6K "	R259,266 ----------	2
-493-11	6.8K "	R201,210,219,231,287,288 ------	7
-497-11	10K "	R283,291 ----------	2

Part No.	Description				Q'ty
1-244-498-11	11K ohms			R242,253,264,273 ----------	4
-501-11	15K "			R207 ----------	1
-514-11	51K "			R235 ----------	1
-519-11	82K "			R255 ----------	1
-521-11	100K "			R226,247,258,277,286 ----------	5
-525-11	150K "			R278 ----------	1
-500-11	13K "			R206,208,214,216,224,227,237, 240 ----------	8
-504-11	20K "			R249,251,257,260,271,289 ------	6
-512-11	43K "			R246----------	1
-493-11	6.8K "			R290 (Adjust)	
-484-11	3K "			")	
-485-11	3.3K "			")	
-486-11	3.6K "			")	
-487-11	3.9K "			")	
-488-11	4.3K "			")----------	1
-489-11	4.7K "			")	
-490-11	5.1K "			")	
-491-11	5.6K "			")	
-492-11	6.2K "			")	
	Ceramic Capacitor				
1-101-953-	3PF	±0.5PF	50V	C206,272 ----------	2
-882-	51PF	±10%	"	C262 ----------	1
-141-	0.01uF	+80 -20%	25V	C201,202,203,207,208, 209,210,213,214,215, 218,219,220,221,222, 223,226,227,228,230, 231,232,234,235,238, 240,241,242,246,248, 249,253,254,255,256, 268,269,273 ---------	38
-952-	2PF	±0.5PF	50V	C270,271 ----------	2
	Styrol Capacitor				
1-103-603-11	120PF	±5%	50V	C263,264 ----------	2
	Polyester Capacitor				
1-105-416-12	0.068uF	±20%	35V	C247 ----------	

Part No.	Description			Q'ty
	Electrolytic Capacitor			
1-121-280-	5uF	12V	C266,257	2
-283-	10uF	25V	C261	1
-284-	30uF	6V	C265	1
-292-	100uF	12V	C260,267	2
	iii) MPX Section			
1-538-544-12	Printed Circuit Board			1
1-221-389-	Potentiometer	5K ohms (B)	R537	1
-304-	"	10K " (B)	R511	1
1-231-035-11	Cds Attenuator		Cds501	1
-035-21	"		Cds502,503	2
-060-11	Filter, 16Kc low pass		LPF501,502	2
1-409-096-	Coil, 19Kc Trap		T506,508	2
-097-	Coil, 67Kc "		T507	1
1-425-261-	Transformer, 19Kc doubler		T503	3
-262-	" , 38Kc pick up		T504	1
-263-	" , 38Kc switching		T505	1
	Carbon Resistor (RD1/8SR ±5%)			
1-244-431-11	18 ohms		R581	1
-441-11	47 "		R573,577,583,585	4
-461-11	330 "		R507	1
-465-11	470 "		R509,521	2
-473-11	1K ohm		R503,510,516,517,518,519,520, 555,566,570,534,546,547,550, 551,552,553,554,574	19
-477-11	1.5K ohms		R536	1
-480-11	2.0K "		R515	1
-481-11	2.2K "		R524,525,540,541	4
-485-11	3.3K "		R538,542,543,539,582	5
-491-11	5.6K "		R565,569	2
-497-11	10K "		R561,548,549,505,560,571,578, 584	8
-505-11	22K "		R558,559,572	3
-509-11	33K "		R530,531	2
-511-11	39K "		R512	1
-513-11	47K "		R514	1
-515-11	56K "		R501,502,564,568	4
-519-11	82K "		R504	1
-520-11	91K "		R508	1

Part No.	Description		Q'ty
1-244-521-11	100K ohms	R506,575,576 ----------	3
-525-11	150K "	R567 ----------	1
-529-11	220K "	R544,545 ----------	2
-533-11	330K "	R562,563 ----------	2
-537-11	470K "	R513,528,529 ----------	3
-499-11	12K "	R532,533 ----------	2
-474-11	1.1K "	R522,523 ----------	2
-421-11	6.8K "	R580,579 ----------	2
-475-11	1.2K "	R526 ----------	1
-474-11	1.1K "	R527 (Adjust))	
-475-11	1.2K "	") ----------	1
-476-11	1.3K "	")	
-472-11	910 "	R535 (Adjust)	
-473-11	1K ohm	") ----------	1
-474-11	1.1K ohms	")	
-495-11	8.2K "	R556,557 (Adjust))	
-497-11	10K "	")	
-501-11	15K "	") ----------	2
-504-11	20K "	")	
-508-11	30K "	")	

Styrol Capacitor

1-103-646-11	7500PF ±5%	C505 ----------	2
-648-11	9100PF "	C514 ----------	2

Styrol Capacitor

1-103-206-11	0.00007uF ±5%	C504 ----------	1
-606-11	0.00016uF "	C511 ----------	1
-641-11	0.0047uF "	C502,503,507,509 ----------	4
-649-11	0.01uF "	C512 ----------	1
-625-11	0.001uF "	C518,519 (Adjust))	
-632-11	0.002uF "	") ----------	2
-636-11	0.003uF "	")	

Polyester Capacitor

1-105-519-12	0.033uF	C516,517 ----------	
-673-12	0.01uF	C530 ----------	1
-677-12	0.022uF	C533,535,536 ----------	3
-679-12	0.033uF	C534 ----------	1
-685-12	0.1uF	C508 ----------	1
-675-12	0.015uF	C529 ----------	1

Part No.	Description	Q'ty
	Electrolytic Capacitor	
1-121-320-	1uF 12V C531 ----------	1
-283-	10uF 25V C522,523,524,525 ----------	4
-285-	30uF 12V C501,520,521,526,527 ----------	5
-293-	100uF 25V C506,510,528 ----------	3
-295-	200uF 6V C515 ----------	1
	Polyethylene Capacitor	
1-129-172-11	0.051uF ±5% 50V C513,532 ----------	2
	iv) Power Supply Section	
1-538-[illegible]-11	Printed Circuit Board ----------	1
-407-12	" " " ----------	2
1-223-011-11	Wire Wound Potentiometer 100 ohms VR702 -------	1
-012-11	" " " 500 " VR701 -------	1
	Carbon Resistor	
1-203-021-11	300 ohms RD1/2L R705 ----------	1
	Carbon Resistor (RD1/4SR ±5%)	
1-244-643-33	56 ohms R709 ----------	1
-658-11	240 " R708 ----------	1
-660-11	300 " R703 ----------	1
-661-11	330 " R710 ----------	1
-667-11	560 " R704 ----------	1
-673-11	1K ohm R701,707 ----------	2
-679-11	1.8K ohms R702 ----------	1
-682-11	2.4K " R706 (Adjust))	
-684-11	3.0K " ")	
-686-11	3.6K " ") ----------	1
-688-11	4.3K " ")	
-690-11	5.1K " ")	

Part No.	Description	Q'ty
	Electrolytic Capacitor	
1-121-292-	100uF 12V C705 ----------	1
-297-	200uF 24V C702 ----------	1
-186-	1000uF 15V C704 ----------	1
	v) General Section	
1-221-635-12	Potentiometer 18ø 5K ohms (B) R203 ----------	1
-779-11	" 10K " (B) R202,501,502 --	3
1-417-017-11	Cds Attenuator, RF band pass ----------	1
1-441-282-12	Transformer, power T701 ----------	1
1-507-142-11	Pin Jack, 2-P J505,501,502,504 ----------	2
1-513-321-	Switch, lever (2-point 1-circuit) S201,202,501,502 ----------	4
1-532-145-11	Fuse ----------	1
1-514-270-21	Switch, lever (1-point 1-circuit) S701 --------	6
1-518-061-13	Lamp, pilot L701,702,703,704,705 ----------	5
-062-12	" " SL ----------	1
1-520-060-	Meter, tuning M202 ----------	1
-061-	Meter tuner input M201 ----------	1
1-526-165-	Socket, voltage selector B ----------	1
1-534-330-	AC Cord with Plug P ----------	1
1-533-012-	Post, fuse F ----------	1
1-536-146-	Terminal, 3P ----------	4
1-517-025-	Socket, pilot lamp ----------	6
	Electrolytic Capacitor	
1-121-030-21	2000uF 50V C701 ----------	1
-328-11	" 35V C703 ----------	1

C. Semi-conductor

Transistor

2SA4-55-1	X101,102,103,104,201,202,203, 204,205,206,207,208 ----------	12
2SC401-5	X209,210,214,215,216,217, 501 - 521 ----------	27
2SC403-3	X211,212,213 ----------	3
2SD28-2	X701,703 ----------	2
2SC318-5	X702,704 ----------	2

Part No.	Description		Q'ty
	Zener Diode		
1S-331	D102	----------	1
1S-338	D707	----------	1
1S-994	D708	----------	1
	Vari-cap Diode		
1S-351S	D101	----------	1
	Diode		
1T22A (IF 9 - 11mA)	D201,202,203,204,209, 210,501,502,503,504	--	10
" (IF 11 - 13mA)	D213,214	----------	2
1T240~~9~~2	D205,206,207,208,211, 212	----------	6
1T26	D505,506	----------	2
SD-1Z	D701 - 706	----------	6

D. Screw, Washer and Nut (Min. Q'ty for Ordering: 100 pcs.)

i) Front End (Tuner)

	Screw		
7-621-259-15	(+) P 2.6 x 3, (for drum)	----------	1
-261-35	" 3 x 5, (for stopper (2), tuning capacitor (4), shield plate (18))	----------	24
-261-45	" 3 x 6, (for shield case)	----------	4
-999-72	Hexagonal 3 x 4, (for stopper)	----------	1
-713-22	Setting screw 3 x 4, (for gear ass'y)	---------	1
	Washer		
7-623-107-25	2.6ø (medium), (for drum)	----------	1
-208-15	Spring 3ø, (for shield plate (18), tuning capacitor (4), stopper (2))	-------	24
	Star 3ø, (for stopper ass'y)	----------	1

Part No.	Description	Q'ty
	Lug	
7-623-508-01	3ø, (for shield Plate) ----------	1
-510-01	4ø, (") ----------	1
	ii) Main Chassis	
	Screw	
7-621-259-19	(+) P 2 x 3,(for upper dial back plate (2), lower dial back plate (2)) -------	4
-259-23	(+) P 2.6x4,(for meter (4), RF attenuator (2), stereo indicator clamp (1), left lamp tube (2)) ----------	10
-259-33	(+) P2.6x5,(for stereo indicator clamp (1), power supply board (4)) ----------	5
-259-43	(+) P 2.6x6,(for bearing) ----------	6
-261-23	(+) P 3 x 4 (for IF shield case (6), lead wire retainer (2), 3P lug terminal (2))	10
-261-33	(+) P 3 x 5 (for lever switch (10), pointer guide (3), bearing mounter (4), MPX circuit board (6), boss 3 x 38 (8), electrolytic capacitor (2), real panel (9)) -----	42
-261-53	(+) P 3 x 8 (for electrolytic capacitor (2), voltage selector (2)) ----------	4
-268-63	(+) P 4 x 10 (for power transformer) ----------	2
-268-73	(+) P 4 x 12 (for rubber foot) ----------	4
-770-29	Bind (+) 3 x 5 (for front panel ass'y (6), rear panel (4)) ----------	10
-771-08	Bind (+) 3 x 5 (for heat sink (2), rear panel (4)) ----------	6
-770-39	Bind (+) 3 x 8, (for 2P pin jack) ----------	4
-999-02	Hex. 3 x 10, (for front panel)----------	7
-561-77	(+) K 3 x 12, (for dial scale) ----------	9
-461-82	Trass (+) 3 x 14, (for transistor) ----------	4
-713-27	Setting Screw 3 x 4, (for flywheel) ----------	2
	Washer	
7-623-108-15	3ø (medium) (for electrolytic capacitor (4), IF shield case (6), bottom plate (9) voltage switch (2), 2P pin jack (4), middle type terminal (3), small type terminal (1)) ----------	29

Part No.	Description	Q'ty
7-623-110-15	4ø (medium) (for tuner (4), transformer (2))---	6
-207-15	Spring 2.6ø (for stereo indicator (2), meter holder (4), bearing holder (6)) --	12
-208-15	Spring 3ø (for front panel (10), dial scale (9), lever switch (10), 2P pin jack (4), small type terminal (2), middle type terminal (6), pointer guide (3), 3P terminal (2), bearing Holder (4), boss BB 3 x 38 (8), electrolytic capacitor (4), front panel ass'y (2), voltage switch (2), bottom plate (9)) ----------	75
-210-15	Spring, 4ø (for 3P terminal (2), rubber foot (4), transformer (2)) ----------	8
-408-05	Star 3ø, (for transistor (4), small type terminal (1)) ----------	5
-407-05	" 2.6ø (for 2.6ø lug plat (1)) ----------	1
	Nut	
7-622-108-01	3ø, (for front panel (10), dial scale (9), 2P pin jack (4), 3P lug terminal (2), small type terminal (1), middle type terminal (3), transistor (4))-	33
-308-01	3ø, (for small type terminal (1), middle type terminal (3), transistor (4)) ----------	8
7-622-110-01	4ø, (for transformer) ----------	2
	Lug	
7-623-508-01	3ø, (for small type terminal (1), middle type terminal (3)) ----------	4
-510-01	4ø, (for lead retainer) ----------	2
-507-01	2.6ø, (for chassis) ----------	1
	Eyelet	
7-623-611-00	1.5 x 3, (for dial string) ----------	1

Part No.	Description		Q'ty
E. Wire and Miscellaneous Items			
	Coaxial Cable		
7-613-076-00	Black		1
	Hook Up Wire		
7-612-074-50	11/0.16/0.64	Black	1
-51	"	Brown	1
-52	"	Red	1
-53	"	Orange	1
-54	"	Yellow	1
-55	"	Green	1
-56	"	Blue	1
-59	"	White	1
-38	17/0.16/0.8	Grey	1
	Microphone Cord		
7-613-100-12	12/0.12	Grey	1
1-904-114-09	10/0.12/2.0	White 140mm	1
-118-00	"	Black 180mm	1
7-613-053-92	16/0.12	Orange/White	1
F. Attached Items			
3-824-055-01	Carton		1
-061-00	Carton, master (for 2 sets)		1/2
-060-01	Case, accessory		1
3-413-100-	Bag, polyethylene		1
2-029-944-02	Cushion		2
3-995-399-11	Manual, instruction		1
X-44900-02-1	Cloth, polishing		1
1-534-049-02	Cord, connection		1
1-501-083-11	Feeder, antenna		1
7-491-001-01	Dessicative		1